**GC B5 Discovery and Contents of the Paleozoic**

Script

Instructions: Advance the PowerPoint slides at every new paragraph and anywhere you see “/”

[1] The Geologic Column—Discovery and Contents of the Paleozoic

[2] In this presentation we will explore the Paleozoic erathem--learning how its layers were first discovered and what kinds of fossils are found in them.

[3] Today the geologic column is often equated with the geologic time scale of millions of years of evolutionary history, but it didn’t start out that way. Several decades before Darwin’s theory of evolution was published, the geologic column was first studied by people who believed in the Bible and thought the geologic column was formed during the worldwide flood.

[4] Our story begins in the United Kingdom, which includes England, Scotland, Wales, and part of Ireland

[5] This map shows the United Kingdom up close. The blue part is England, (click) and the red ring shows you about where Somerset is located.

[6] Around the year 1800 the English were mining coal in Somerset England. To make it easier to transport the coal after it was mined, they built a canal between there and London. / While a man named William Smith was working on the project, he began to notice the fossils they found while digging the canal.

[7] He observed that the same kinds of fossils always occurred in the same layers of rocks / and always in a specific sequence. Once he noticed that the fossils appeared in the same order, he could study the fossils where they were digging and then predict what kind of fossils he would find in the next layer. This predictable order of fossils came to be known as the Law of Faunal Succession

[8] The word fauna is the name for the animals found in a certain place. / Succession refers to things that come one after the other in a certain order. In this context, the words refer to a succession of fossil faunas.

[9] The coal-bearing layers near the Somerset Canal / became known as the Carboniferous system.

[10] Sir Roderick Murchison used the principles of William Smith to work out the sequence of fossils that lie below the coal bearing layers in Wales.

[11] As he collected fossils from the different layers, he discovered specific fossil communities. These communities contained different plants and animals that were similar to, yet distinct from, the communities found in the layers above and below.

[12] For example, there could be trilobites in three successive rock formations, but the trilobites in one formation / would be different than the trilobites in the formation above or below. (click for arrows; then click for next slide)

[13] Murchison grouped the fossils into systems he called Lower Silurian / and Upper Silurian. / The Lower Silurian / was later re-named the Ordovician in 1879.

[14] These systems of rock layers were given the names of Celtic tribes from Wales, which is the green part of this map of the United Kingdom. / The Silurian system was named after a tribe from southern Wales, / and the Ordovician system was named after a tribe rom northern Wales.

[15] In Devonshire, England, which was right next to Somerset… Murchison found the same fossils had had found in the Upper Silurian / as well as additional fossil communities in the layers above. / He called this newest system the Devonian, after the place where he had discovered the newest fossils.

[16] Fossil communities similar to the ones found in these layers were found in the same order all over Europe

[17] Eventually Murchison was invited by the Czar to come study fossil communities in Russia.

[18] In the Ural Mountains near the town of Perm, Russia…

[19] …he found fossil communities like those from the Coal Measure in Great Britain, / andhe found new communities above them.

[20] He named this new system Permian for the town of Perm.

[21] Murchison believed that the same sequence of fossil communities was preserved throughout the world. / He firmly established the Law of Faunal Succession as a way to correlate rock layers worldwide. / That means that when he found a certain kind of fossil in rock layers in different places around the world, he could determine which system he was digging in by the presence of that particular fossil.

[22] Except for the Permian which was named for a town in Russia,…

[23] And carboniferous, which refers to the coal content of the layers,…All the other subdivisions of the Paleozoic erathem were named for places in England or Wales.

[24] The Devonian system got its name from Devonshire England

[25] The Silurian system was named after a Celtic tribe in southern Wales

[26] The Ordovician system was named for another Celtic tribe in northern Wales

[27] And the Cambrian system—which was named by Adam Sedgewick--got its name from the old Roman name for Wales

[28] In North America, the Carboniferous has been divided into the Mississippian and Pennsylvanian, / which are not recognized in Europe. They were named for sedimentary rocks in the Mississippi River Valley and the state of Pennsylvania.

[29] What kinds of creatures are found in these changing communities? Most creatures found in the Paleozoic layers were creatures that lived in or near the water. / Sponges and various kinds of sea shells appear throughout the Paleozoic layers.

[30] So do starfish…

[31] …and various kinds of fish and sharks

[32] Many different kinds of Trilobites are common throughout the Paleozoic layers.

[33] These layers also include sea scorpions. Most kinds were less than 8 inches long, but the largest one found was over 8 feet long.

[34] Amphibians and some reptiles appear in these layers. This is Dimetrodon, a reptile from the upper Paleozoic layers that actually has a lot in common with mammals. It is easily recognizable by the prominent fan on its back. People often think Dimetrodon was a dinosaur, but it wasn’t.

[35] One of the most exciting fossils found in the upper Paleozoic layers is the Dunkleosteus, a huge predator at the top of the food chain. It could grow to be as long as 33 feet!

[36] Both the rock layers themselves

[37] and the fossils found in them provide us with observable data. This data was first studied by people who believed in the Bible and interpreted the data in ways that were consistent with what the Bible teaches.

[38] So even though the geologic column has come to be associated with millions of years of evolution

[39] it’s important to distinguish between the data / and the interpretation of that data. By itself, there’s nothing evolutionary about the geologic column—it is just a bunch of rock layers that are identified by their fossil contents and were mostly named for the places where the fossils were discovered and described.

[40] In a later presentation we will explore the question of whether or not there is evidence within the fossil record for evolution. / But first we’ll explore the discovery and contents of the Mesozoic / and the Cenozoic.